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Reply to Office Action of July 3, 2006
Atty. Dkt. No. NVDA/P000765**REMARKS**

This is intended as a full and complete response to the Office Action dated July 3, 2006 having a shortened statutory period for response set to expire on October 3, 2006. Claims 1-20 were examined. The Examiner rejected claims 1-6, 8, 11-17, 19, and 20 and objected to claims 7, 9-10, and 18. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-10

Claims 1-6, and 8 are rejected under 35 U.S.C. § 102(e) as being anticipated by *Morein* (U.S. Patent No. 6,999,076). This rejection is respectfully traversed.

Applicant is amending claim 1 to recite the limitation that the first stencil function specifies a comparison function, a comparison mask, and a reference value. The stencil function is described in paragraph [0027] of the present application. The early stencil rejection method described in the present application uses two stencil functions, a first stencil function that is a predicted stencil function and a second stencil function that is an actual stencil function. As shown in Figure 4 and described in [0043]-[0048] of the present application, when the predicted stencil function matches the actual stencil function the coverage data for a fragment is modified. Claim 1 has also been amended to clarify the meaning of coverage data as indicating which pixels are covered by a fragment formed by an intersection of the pixels and a primitive. Coverage data is described in paragraph [0022] of the present application.

By contrast, *Morein* does not teach or suggest two stencil functions. Rather, *Morein* teaches a single stencil test that is a non-depth fragment test and an early culler that determines the configuration of non-depth tests. Nowhere does *Morein* teach or suggest two different stencil functions or comparing the second stencil function to the first stencil function and modifying coverage data when the two functions match, as recited in claim 1. Furthermore, when a non-depth test, such a stencil test, is enabled and may effect whether or not a fragment survives, the fragment is passed to the pipeline without being culled, see column 5, lines 28-37. Therefore, when stenciling is

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enabled, the early culling technique described in *Morein* cannot be realized. For this reason *Morein* is not relevant to the present invention.

As the foregoing illustrates, *Morein* fails to teach or suggest each and every one of the recited limitations of amended claim 1, and this failure precludes *Morein* from anticipating amended claim 1. For these reasons, Applicant submits that amended claim 1 is in condition for allowance and respectfully request withdrawal of the 35 U.S.C. § 102(e) rejection of this claim. Since claims 2-10 depend from allowable claim 1, these claims also are in condition for allowance.

Claims 11-16

Claims 11-16 are also rejected under 35 U.S.C. § 102(e) as being anticipated by *Morein*. This rejection is respectfully traversed.

Applicant is amending claim 11 to recite the limitation of a stencil criterion that represents a predicted stencil function. The stencil criterion is used to produce stencil results which in turn are used to modify coverage data. The storage resource and test unit of claim 11 are shown in Figure 3B and described in paragraph [0044] of the present application. An advantage of the present invention is that when the predicted stencil function matches the actual stencil function the stencil results can be used to cull portions of fragments prior to shading to avoid performing computationally intensive shading operations. Claim 11 has also been amended to clarify the meaning of coverage data as indicating which pixels are covered by a fragment formed by an intersection of the pixels and a primitive. Claims 12-14 are amended to conform to amended claim 11.

Again, *Morein* teaches performing early culling based on depth values when a non-depth test, such as a stencil test, will not effect whether or not a fragment survives. *Morein* does not teach or suggest using a predicted stencil function to produce stencil results, and this failure precludes *Morein* from anticipating amended claim 11. For these reasons, Applicant submits that amended claim 11 is in condition for allowance and respectfully requests withdrawal of the 35 U.S.C. § 102(e) rejection of that claim. Since claims 12-16 depend from allowable claim 11, these claims also are in condition for allowance.

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Claims 17-20

Claims 17, and 19-21 are also rejected under 35 U.S.C. § 102(e) as being anticipated by *Morein*. This rejection is respectfully traversed.

Applicant is amending claim 17 to recite the limitation that the predicted stencil function specifies a predicted comparison function, a predicted comparison mask, and a predicted reference value. The predicted stencil function, also referred to as the stencil criterion, is described in paragraph [0028] of the present application as an estimate of the actual stencil function. Claim 17 has also been amended to clarify the meaning of coverage data as indicating which pixels are covered by a fragment formed by an intersection of the pixels and a primitive.

As previously discussed, *Morein* only teaches that a stencil test is a non-depth test that may prevent early culling from being used. *Morein* does not teach or suggest a predicted stencil function, and this failure precludes *Morein* from anticipating amended claim 17. For these reasons, Applicant submits that amended claim 17 is in condition for allowance and respectfully requests withdrawal of the 35 U.S.C. § 102(e) rejection of that claim. Since claims 18-20 depend from allowable claim 17, these claims also are in condition for allowance.

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Conclusion

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed. Applicant reserves the right to subsequently take up prosecution of the claims as originally filed in this application in a continuation, a continuation-in-part and/or a divisional application. If the Examiner has any questions, please contact the Applicant's undersigned representative at the number provided below.

Respectfully submitted,



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